Abstract

A server array controller that includes a Data Flow Segment (DFS) and at least one Control Segment (CS). The DFS includes the hardware-optimized portion of the controller, while the CS includes the software-optimized portions. The DFS performs most of the repetitive chores including statistics gathering and per-packet policy enforcement (e.g. packet switching). The DFS also performs tasks such as that of a router, a switch, or a routing switch. The CS determines the translation to be performed on each flow of packets, and thus performs high-level control functions and per-flow policy enforcement. Network address translation (NAT) is performed by the combined operation of the CS and DFS. The CS and DFS may be incorporated into one or more separate blocks. The CS and DFS are independently scalable. Additionally, the functionality of either the DFS or the CS may be separately implemented in software and/or hardware.